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EXAMINER

LEUNG, JENNIFER A

ART UNIT	PAPER NUMBER
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1764

16

DATE MAILED: 07/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	09/711,362		YOKOYAMA ET AL.	
	Examiner		Art Unit	
	Jennifer A. Leung		1764	

mk-16

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 21-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20, 33 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-33 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>7</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Group I, claims 1-20 and 33, in Paper No. 14 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election **without** traverse (MPEP § 818.03(a)).

2. Claims 21-32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a non-elected invention, there being no allowable generic or linking claim.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "115" has been used to designate both "exhaust system" (page 88, line 6) and "recovery chamber" (page 91, line 16).

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5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

- a. FIG. 1: 106a, 106b and 106c (page 82, lines 21-26); 111b and 111c (page 87, lines 3-18); 115b and 111c (page 91, lines 20 +)
- b. FIG. 2: 210 (page 96, line 1)
- c. FIG. 3: 300 and 350 (page 96, line 6 to page 98, line 5)
- d. FIG. 12: 1201, 1202, 1203 (page 111, lines 6-15)

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description:

- a. FIG. 3: 306, 307, 308, 316 and 318
- b. FIG. 5: 508c, 510c and 512c
- c. FIG. 6: 602c, 603, 604, 605c, 606 and 607
- d. FIG. 10: 3a, 18, 22, 32, 34, 35, 36
- e. FIG. 11: 3a, 18, 24, 32, 34, 35, 36
- f. FIG. 12: 3a, 18, 34, 35, 36

7. The lengthy drawings have not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the drawings.

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

8. The disclosure is objected to because of the following informalities:
 - a. Page 85, line 9: "110" should be changed to --106-- as it refers to FIG. 1
 - b. Page 89, line 5: "109" should be changed to --113-- as it refers to FIG. 1
 - c. Page 89, line 18: "114" should be changed to --106-- as it refers to FIG. 1
 - d. Page 95, line 15: "201a" should be changed to --201b-- as it refers to FIG. 2
 - e. Page 3, lines 25-26: ", a reduced pressure heating furnace," should be deleted.
9. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-20 and 33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 1-20 and 33, it is unclear as to what is intended by "hermetic", and where it is disclosed in the specification and drawings. Furthermore, it is unclear as to what is intended by "tube", and where it is disclosed in the specification and drawings.

With respect to claim 1, it is unclear as to what the applicants are attempting to recite by "tube having a second opening in an inserting direction" (lines 3-4).

With respect to claim 4, it is unclear as to what the applicants are attempting to recite by "tube has a third opening on a side opposite to the first hermetic chamber with the hermetic door therebetween".

With respect to claim 5, it is unclear as to how "a means for regulating a temperature" is structurally related to the elements of the apparatus.

With respect to claim 8, it is unclear as to what the applicants are attempting to recite by "chambers are lined up, partitioned off".

With respect to claim 9, it is unclear as to what the applicants are attempting to recite by "tube is inserted into the first opening of the first hermetic chamber from the second hermetic chamber", and where it is disclosed in the specification and drawings. Furthermore, it is unclear as to the structural relationship between "the first opening of the first hermetic chamber" and "the second hermetic chamber".

With respect to claim 10, it is unclear as to what is intended by "on the second hermetic chamber side".

With respect to claim 12, it is unclear as to how the "an exhaust system" (line 2) is related to the "an exhaust system" set forth in claim 11. Furthermore, it is unclear as to what is intended by "hermetically connected", and where it is disclosed in the specification and drawings. Furthermore, "the third opening" (line 3) lacks proper positive antecedent basis.

With respect to claim 13, it is unclear as to the structural relationship between "a means for performing regulation" and the other elements of the apparatus. Likewise in claim 14

With respect to claim 15, it is unclear as to the structural relationship between "a means for supplying a carrier gas" and other elements of the apparatus. Furthermore, "the pressure regulating means" lacks proper positive antecedent basis.

With respect to claim 16, "the exhaust means" lacks proper positive antecedent basis.

With respect to claim 17, "wet" is a relative term and therefore vague and indefinite.

With respect to claim 18, it is unclear as to what is intended by "exchangeably provided". Likewise, it is unclear as to what is intended by "hermetically openable and closeable".

With respect to claim 19, it is unclear as to the structural relationship between "a means for regulating a temperature" and the other elements of the apparatus.

With respect to claim 20, it is unclear as to the structural relationship between "a means for supplying a non-oxidizing gas" and the other elements of the apparatus.

With respect to claim 33, it is unclear as to the structural relationship between "a hermetic zone", "an exhaust system", "means for heating" and "a means for controlling the heating means", and the other elements of the apparatus. Furthermore, it is unclear as to what the applicants are attempting to recite by "gets ready to reform" (lines 9-10).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1-3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Kemper (U.S. 3,770,501).

With respect to claim 1, Kemper discloses a treatment apparatus comprising a hermetic chamber 10 (Abstract, lines 7-9) having an opening (column 4, line 3); a tube 13 capable of inserting into the chamber opening (column 4, line 3), said tubing having a second opening 13' in the inserting direction (FIG. 1); and a hermetic door 15 capable of opening and closing the chamber opening (column 4, lines 62-68).

With respect to claim 2, Kemper discloses an exhaust system 33, 34 connected to the hermetic chamber 10 via the first opening (FIG. 1).

With respect to claim 3, Kemper discloses an exhaust system connected to the hermetic chamber via the tube (vacuum pump not shown; column 5, lines 46-54).

With respect to claim 5, Kemper discloses a means for regulating the temperature 12 (column 4, lines 3-14).

Instant claims 1-3 and 5 read on the apparatus of Kemper.

12. Claims 1-3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Bell et al. (U.S. 4,431,612).

With respect to claim 1, Bell et al. disclose a treatment apparatus comprising a hermetic (interpreted as air tight) chamber 18 (column 4, lines 14-18) having an opening 78; a tube 68 capable of inserting into the chamber opening 78; said tube having a second opening (FIG. 1; column 7, lines 53-61) in the inserting direction; and a hermetic door 70 capable of opening and closing the chamber opening 78.

With respect to claim 2, Bell et al. disclose an exhaust gas system 78 connected to the chamber 18 via the first opening 78.

With respect to claim 3, Bell et al. disclose an exhaust gas system 78 connected to the chamber 18 via the tube 66.

With respect to claim 5, Bell et al. disclose a means for regulating a temperature (furnace 10, by definition) in the hermetic chamber 18.

Instant claims 1-3 and 5 read on the apparatus of Bell et al.

13. Claim 33 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Tejima et al. (JP 9-248549).

Tejima et al. disclose a treatment apparatus 100 comprising an airtight zone 102, 103, an exhaust system 106, 110; a means for heating 109, 113 the interior of the airtight zone; a reforming means placed between the airtight zone and the exhaust system 115; and a means for controlling the heating means and reforming means 611 (Fig. 7; Sections [0216-0218], [0237]).

Instant claim 33 reads on the apparatus of Tejima et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

14. Claims 1-3, 5-9, 11, and 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tejima et al. (JP 9-248549) in view of Legille (U.S. 3,907,261).

With respect to claim 1, Tejima et al. disclose a treatment apparatus **100** comprising a first hermetic chamber **102** having a first opening and a hermetic door **105b** capable of opening and closing the first opening. However, Tejima et al. are silent as to a tube capable of inserting into the first opening, where the tube has a second opening in the inserting direction, and where upon insertion, the door is shielded from the chamber.

Legille teaches an exhaust gas recovery means comprising a tube **17** capable of inserting into an opening **6** of a furnace, wherein the tube **17** has a second opening in the inserting direction for communicating with the exhaust gases, and a door **7** that is shielded from the chamber upon insertion of the tube **17** (column 4, lines 14-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the exhaust gas recovery means of Legille to the apparatus of Tejima et al. because the valve apparatus is capable of venting exhaust gas while protecting the door against erosion, corrosion, and deposits, as taught by Legille.

With respect to claim 2, Tejima et al. further discloses an exhaust system **106** connected to the first airtight chamber **102** via the first opening (FIG. 1).

With respect to claim 3, the same comments with respect to Tejima et al. apply. However, Tejima et al. are silent as to an exhaust system connected to chamber **102** via a tube.

The same comments with respect to Legille apply. Furthermore, Legille teaches an exhaust system (25, column 4, lines 63-68) connected to the chamber via the tube **17**.

It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the exhaust system via the tube to the apparatus of Tejima et al. because the exhaust system prevents escape of toxic gases to the environment.

With respect to claim 5, the same comments with respect to Tejima et al. and Legille apply. Furthermore, Tejima et al. disclose means for regulating a temperature (Section [0216]) in the first airtight chamber **102**.

With respect to claim 6, the same comments with respect to Tejima et al. apply. However, Tejima et al. is silent as to a guiding means along the inserting direction of the tube.

The same comments with respect to Legille apply. Furthermore, Legille teaches a guiding means (18, 19, 20; column 4, lines 4-9) along the inserting direction of the tube **17**.

It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a guiding means to the apparatus of Tejima et al. because the guiding means ensures proper positioning of the tube for exhaust gas withdrawal from the chamber.

With respect to claim 7, the same comments with respect to Tejima et al. Furthermore, Tejima et al. disclose a chamber **601** with a plurality of first openings (FIG. 6) comprising a

hermetic door **610** at each opening (Fig. 8; Sections [0292]-[0293]). However, Tejima et al. are silent as to a tube provided at each of the first openings.

The same comments with respect to Legille apply.

It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a tube at each of the first openings for the apparatus of Tejima et al. because the tube of Legille enables venting of exhaust gas at each of the openings while protecting the door against erosion, corrosion, and deposits at each opening. In any event, it has been held that the duplication of parts involves only ordinary skill in the art. *St. Regis Paper Co. v. Beemis Co. Inc.* 193 USPQ 8, 11 (1977); *In re Harza* 124 USPQ 378 (CCPA 1960).

With respect to claim 8, the same comments with respect to Tejima et al. and Legille apply. Furthermore, Tejima et al. disclose a plurality of airtight chambers (Section [0244] lines 4-5) lined up and partitioned off by openable and closeable partitions **105** (FIG. 1).

With respect to claim 9, the same comments with respect to Tejima et al. and Legille apply. Furthermore, Tejima et al. discloses a second airtight chamber **103** adjoining the first airtight chamber **102** with an airtight door **105c** between. Also, Tejima et al. discloses an exhaust recovery means (comprising the tube of Legille in the modified apparatus of Tejima et al.) connected to the first opening of the first chamber **102** from the second chamber **103** (FIG. 2).

With respect to claim 11, the same comments with respect to Tejima et al. and Legille apply. Furthermore, Tejima et al. disclose an exhaust system **110** connected to the first airtight chamber **102** via the second airtight chamber **103** (FIG 1).

With respect to claims 13 and 14, the same comments with respect to Tejima et al. and Legille apply. Furthermore, Tejima et al. disclose a pressure regulation means **114, 112, 110** for the first airtight chamber **102** (Sections [0220], [0241], [0036]) pressure regulation means **114** (Section [0239]) for the second airtight chamber **103** (Section [0038]).

With respect to claim 15, the same comments with respect to Tejima et al. and Legille apply.. Furthermore, Tejima et al. disclose a pressure regulation means comprising a means for supplying a carrier gas **112** to the second airtight chamber (FIG. 1).

With respect to claim 16, the same comments with respect to Tejima et al. and Legille apply.. Furthermore, Tejima et al. disclose a filter means **1201, 1202, 1203** between the second airtight chamber **103** and the exhaust means (Section [0302], lines 14-18).

With respect to claim 17, the same comments with respect to Tejima et al. and Legille apply. Furthermore, Tejima et al. disclose a wet filter for the filter means **2006**.

With respect to claim 18, the same comments with respect to Tejima et al. and Legille apply. Furthermore, Tejima et al. disclose that the exhaust gas recovery means (comprising the tube in the modified apparatus of Tejima et al.) are interchangeable (Section [0249]).

With respect to claim 19, the same comments with respect to Tejima et al. and Legille apply. Furthermore, Tejima et al. disclose a means for regulating a temperature (Section [0237]) in the second airtight chamber **103**.

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With respect to claim 20, the same comments with respect to Tejima et al. and Legille apply. Furthermore, Tejima et al. disclose a means for supplying a non-oxidizing gas (Section [0248]) to the second airtight chamber **103**.

15. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tejima et al. (JP 9-248549) in view of Legille (U.S. 3,907,261), as applied to claim 1, and further in view of Tomlinson et al. (U.S. 2,657,031).

The same comments with respect to Tejima et al. and Legille apply. However, Tejima et al. and Legille are silent to a tube with a third opening on a side opposite the chamber.

Tomlinson et al. teach a tube **40** with a third opening **42** on a side opposite the exhaust gas source **38, 39**.

It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a third opening on a side opposite the chamber to the tube of the modified apparatus of Tejima et al. because the third opening allows the tube to communicate with the area exterior of the tube to permit air to pass through, as taught by Legille.

16. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tejima et al. (JP 9-248549) in view of Legille (U.S. 3,907,261), as applied to claims 9 and 11, and further in view of Tomlinson et al. (U.S. 2,657,031).

With respect to claim 10, the same comments with respect to Tejima et al. and Legille apply. However, they are collectively silent as to the third opening positioned on the second airtight chamber **103** side when the tube is inserted into the first opening.

The same comments with respect to Tomlinson et al. apply.

It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide a third opening on the second hermetic chamber side to the tube of the modified apparatus of Tejima et al. because the third opening allows the tube to communicate with the area exterior of the tube to permit air to pass through, i.e. for further processing in the second hermetic chamber, as taught by Legille.

With respect to claim 12, the same comments with respect to Tejima et al. and Legille apply. Furthermore, Tejima et al. disclose an exhaust system 110 connected to the first chamber 102 via the second chamber 103 in an airtight, hermetic fashion.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

17. Claims 1-2, 5, 8-9, 11, 13-15, 19-20 and 33 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-6, 8-9 and 11-21 of U.S. Patent No. 6,332,909. Although the conflicting claims are not identical, they are not patentably distinct from each other.

With respect to instant claim 1, both claim a gas-tight chamber (U.S. '909, claim 1), a hermetic door ("partition"; U.S. '909, claim 1) and a tube ("means for recovering the first metal vaporized"; U.S. '909, claim 4).

With respect to instant claim 2, both claim an exhaust system connected to the first gas-tight chamber ("means for processing/recovering the first metal vapor"; U.S. '909, claim 4).

With respect to instant claim 5, both claim a means for regulating temperature in the first gas-tight chamber (U.S. '909, claim 1).

With respect to instant claim 8, both claim gas-tight chambers (first and second) lined up and partitioned off by openable and closeable partitions (U.S. '909, claim 1).

With respect to instant claim 9, both claim a second gas-tight chamber adjoining a first gas-tight chamber with a gas-tight door (partition) therebetween, wherein the tube ("means for recovering the first metal vaporized"; U.S. '909, claim 4) is inserted from the second gas-tight chamber ("means for recovering the second metal vaporized"; U.S. '909, claim 5).

With respect to instant claim 11, both claim an exhaust system connected to the first gas-tight chamber via the second gas-tight chamber (U.S. '909, claims 4-6).

With respect to instant claims 13 and 14, both claim pressure regulation means for the first and second gas-tight chambers (U.S. '909, claim 1).

With respect to instant claim 15, both claim a carrier gas supplying means (U.S. '909, claims 1, 3-4, 8-9, 11-12).

With respect to instant claim 19, both claim a temperature regulating means for the second gas-tight chamber (U.S. '909, claim 1).

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With respect to instant claim 20, both claim a non-oxidizing gas supply means to the second gas-tight chamber (U.S. '909, claim 21).

With respect to instant claim 33, both claim an apparatus comprising a gas tight zone (U.S. '909, claim 1), an exhaust system (U.S. '909, claims 4-6), a heating means (U.S. '909, claim 1), a reforming means (U.S. '909, claims 13, 15, 17, 19), and a means for controlling the heating and reforming means (U.S. '909, claims 8, 9, 12).

18. Claims 3 and 6 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-6, 8-9 and 11-21 of U.S. Patent No. 6,332,909 in view of Legille (U.S. 3,907,261).

The same comments with respect to U.S. '909 and Legille apply.

19. Claims 3 and 6-7 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-6, 8-9 and 11-21 of U.S. Patent No. 6,332,909 in view of Legille (U.S. 3,907,261).

With respect to instant claims 3 and 6, the same comments with respect to U.S. '909 and Legille apply.

With respect to instant claim 7, the same comments with respect to U.S. '909 and Legille apply. Furthermore, it has been held that the duplication of parts involves only ordinary skill in the art. *St. Regis Paper Co. v. Beemis Co. Inc.* 193 USPQ 8, 11 (1977); *In re Harza* 124 USPQ 378 (CCPA 1960).

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20. Claims 4, 10 and 12 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-6, 8-9 and 11-21 of U.S. Patent No. 6,332,909 in view of Legille (U.S. 3,907,261) and Tomlinson et al. (U.S. 2,657,031).

With respect to instant claims 4, 10 and 12, the same comments with respect to U.S. '909, Legille, and Tomlinson et al. apply.

21. Claims 16-18 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1, 3-6, 8-9 and 11-21 of U.S. Patent No. 6,332,909 in view of Tejima et al. (JP 9-248549).

With respect to instant claim 16, the same comments with respect to U.S. '909 apply. However, U.S. '909 is silent as to claiming a filter means placed between the second gas-tight chamber and the exhaust means.

Tejima et al. teach substantially the apparatus of U.S. '909 and further teach a filter means **1201**, **1202**, **1203** between the second gas-tight chamber **103** and the exhaust means (Section [0302], lines 14-18).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the filter means to the apparatus of U.S. '909 because the filter means is capable of recovering and purifying the vaporized gas, as taught by Tejima et al.

With respect to instant claim 17, the same comments with respect to U.S. '909 apply. However, U.S. '909 is silent as to claiming a wet filter means.

The same comments with respect to Tejima et al. apply. Furthermore, Tejima et al. teach a wet filter means **2006**.

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It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the wet filter means to the apparatus of U.S. '909 because the wet filter means is capable of recovering and filtering the vaporized gas to produce a harmless, smokeless, and odorless gas, as taught by Tejima et al.

With respect to instant claim 18, the same comments with respect to U.S. '909 apply. However, U.S. '909 is silent as to claiming an interchangeable tube ("means for recovering the metal vaporized").

Tejima et al. teach an interchangeable means for recovering vaporized metal 115 (Section [0249]).

It would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the interchangeable means for recovering vaporized metal to the apparatus of U.S. '909 because the interchangeable means allows the switching of the means for recovering the metal vaporized depending on the desired metal to be recovered at a respective vaporization temperature.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Hisada et al. ; Hardison et al. ; Okada et al. ; Banno et al. ; Yokoyama U.S. '857, U.S. '933; and are presented to illustrate the current state of the art.

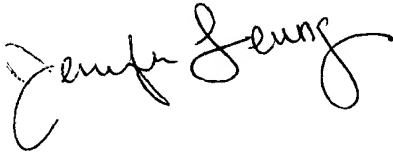
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer A. Leung whose telephone number is 703-305-4951. The examiner can normally be reached on 8:30 am - 5:30 pm M-F, every other Friday off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marian C. Knode can be reached on 703-308-4311. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

JAL
July 9, 2002




HIEN TRAN
PRIMARY EXAMINER